BLUECAT™

BlueCat integration with Cisco Application Centric Infrastructure

Increased visibility and automation for data center networks

Challenge

Modern data centers are extremely complex and highly dynamic. With the sudden bursts in the number of endpoints, the demand for data has increased exponentially. Datacenters have increased in complexity and are now often highly virtualized, span both public and private clouds, demand rapidly deployed containerized environments, and can be highly segmented. This rapid change of scale poses a great strain on application delivery time while maintaining the security levels.

In the current setup, DDI administrators often have limited visibility of IP addresses and endpoints, making it difficult to deliver applications and maintain optimum security levels efficiently. Assigning IP address pools, tracking down how and where they are being used, and keeping DDI systems up-to-date commonly requires a series of requests, handoffs, and manual data entry tasks. This can lead to confusion and human error, unused or duplicate IP addresses, and tedious, manual troubleshooting.

To improve network visibility and operational efficiency, DDI systems, and data center networks must be more integrated and automated.

Cisco Application Centric Infrastructure and BlueCat

Cisco® Application Centric Infrastructure (Cisco ACI™), the industry's leading software-defined networking solution, now integrates with BlueCat's enterprise-grade DDI automation platform.

The Cisco ACI App Center offers the following main customer benefits:

• Easily procure, install, deploy, and upgrade Cisco ACI apps from a single web portal

• Extract the business and technology benefits from your Cisco ACI network.

• Improve your productivity and operational efficiency with a wide variety of marketplace apps.

• License custom solutions from Cisco's truly global partner and developer community.

• Deploy interoperable solutions from Cisco ACI open ecosystem partners for Layer 4 through Layer 7 services.

BlueCat is an extensible platform that allows you to take complex, resource-intensive, automated tasks and build cleaner and lighter implementations while enabling a simple, self-service focused environment

BlueCat can automatically discover infrastructure that is created within Cisco ACI—including tenants, virtual routing and forwarding networks (VRFs), application profiles, bridge domains, and IP addresses—and then map those details to the BlueCat Address Manager™.

BlueCat offers the following main customer benefits:

• Extensible automation engine for Enterprise IPAM

• Easily build customizable workflows written in Python 3

• Build precise automation and reduce risks of human error

• Improved scalability and simplify management of complex DDI

• Increase efficiency to reduce manual effort and eliminate tedious work flows

The combined solution provides customers with a centralized point of view and reduces the burden of managing complex DDI environments.

• Enhances visibility between Cisco ACI and BlueCat

• Increases data center automation

• Reduces manual data entry

• Speeds up troubleshooting

BAM	⟷	BlueCat DNA Workflow	⟷ REST API	Cisco DNAC APIC-EM

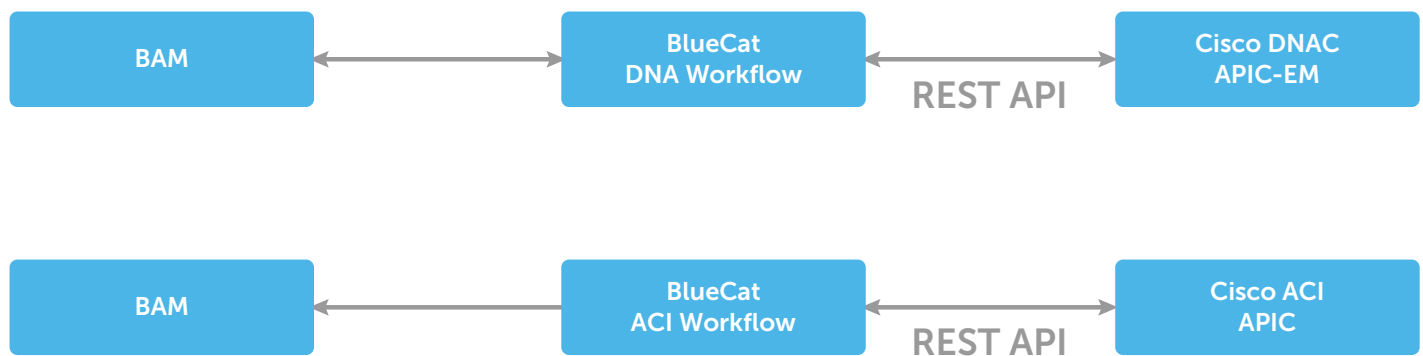| BAM	⟷	BlueCat ACI Workflow	⟷ REST API	Cisco ACI APIC

Figure 1: Overview of the BlueCat integration with Cisco ACI

Use case: Fabric discovery and endpoint mapping

Using the BlueCat Address Manager, Cisco ACI, and BlueCat share and synchronize subnet, IP address, and additional network information.

You can import the following infrastructure elements from Cisco APIC:

ACI Fabric Devices

- APIC(s)
- SPINE(s)
- LEAF(s)

Tenants

- Private Networks
- Bridge Domains
- Subnets
- Endpoints

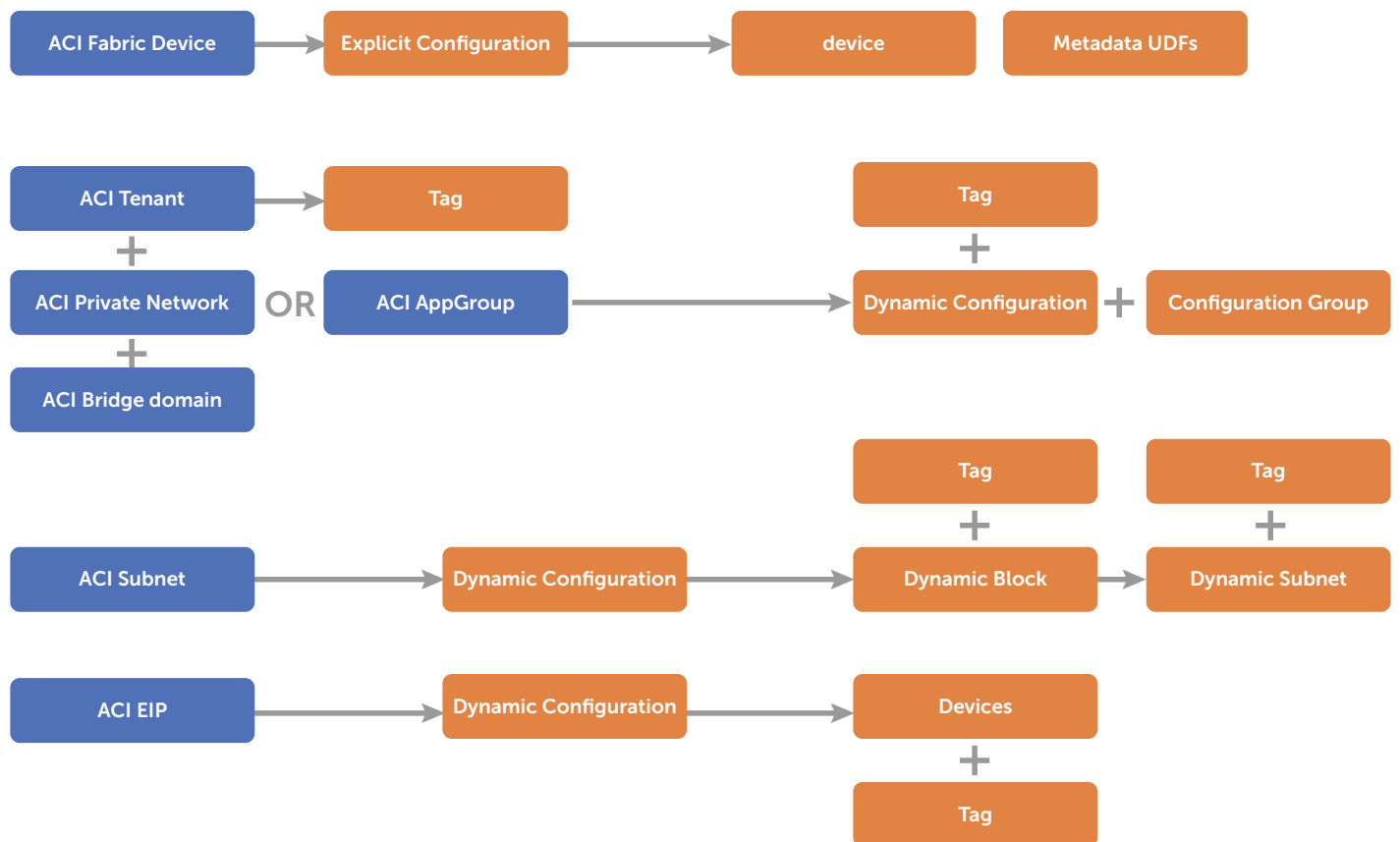Additional meta-data such as endpoint and application profile groups

Figure 2: Cisco ACI infrastructure elements (Blue) imported into the BlueCat Address Manager (Orange).

A Cisco ACI tenant group is created in the BlueCat Address Manager, with tags for every Cisco ACI tenant. All Cisco ACI fabric elements are added as devices, including the IP address, domain network, vendor, model, serial number, and state of each node. A BlueCat configuration is then created for each tenant, VRF, and bridge domain and tagged with the correct Cisco ACI tenant.

As a result, all Cisco ACI infrastructure—including subnets, tenants, and endpoint devices—is automatically listed in the BlueCat Address Manager (Figure 2). This gives BlueCat administrators a near instantaneous view of where and how IP addresses are being utilized in the Cisco ACI environment as well as additional network connectivity and configuration details. And with fabric discovery and endpoint mapping fully automated, network operations and troubleshooting become faster and more efficient.
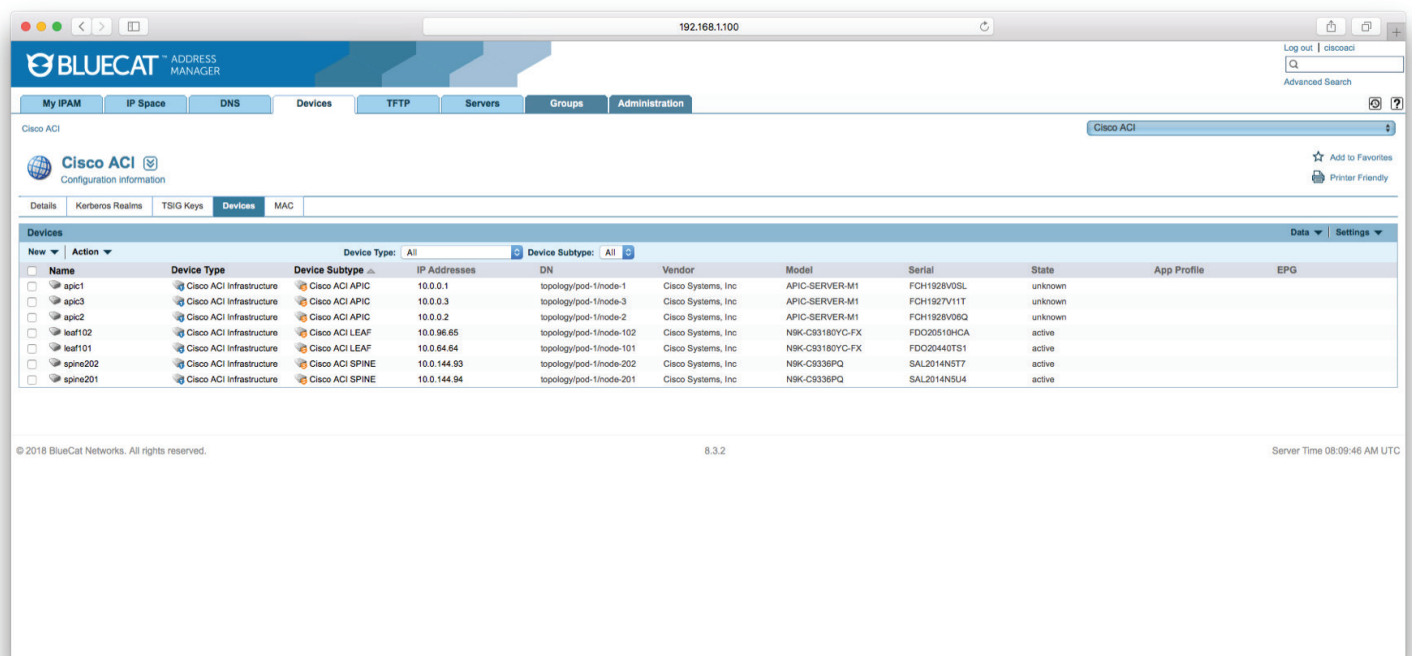

Figure 3: Cisco ACI information is automatically added to the BlueCat Address Manager

Conclusion

Enterprise DDI solutions are critical for delivering applications quickly, securely, and at scale. But administrators need full visibility of IP addresses and endpoints, which now span distributed, dynamic data center environments.

The integration of BlueCat and Cisco ACI gives DDI administrators single console visibility and automation, helping increase operational efficiency and reduce troubleshooting tasks.

As Cisco ACI and BlueCat become more integrated, network operations can continue to evolve from manual requests, handoffs, and data entry between functional silos to dynamic, automated workflows spanning network, server, and DevOps teams.

About Cisco ACI

Cisco ACI, the industry's leading SDN solution, brings simplification, consistency, and protection to enterprises that rely on multiple data centers and cloud environments. Network operations teams can establish independent network fabrics that are tied together into a single, logical framework. This allows seamless connectivity, policy control, and workload portability across distributed environments. And it provides fault isolation to protect a business and its data resources while delivering high availability and application performance. For more information, visit https://www.cisco.com/go/aci.

About BlueCat

The largest and most complex global enterprises trust BlueCat to provide the foundation for their digital transformation strategies such as cloud migration, virtualization, and cybersecurity. The BlueCat Platform improves visibility and increases control over all services and devices on your network through centralized management of both DNS and DHCP infrastructures. For more information, please visit www.bluecatnetworks.com.

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